

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

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| Order Instituting Rulemaking Regarding Policies, |) | |
| Procedures and Incentives for Distributed |) | R.04-03-017 |
| Generation and Distributed Energy Resources. |) | (Filed March 16, 2004) |
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SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E)
UPDATE ON THE METHODOLOGY AND PROCESS
FOR EVALUATING DISTRIBUTED GENERATION AS A DISTRIBUTION
ALTERNATIVE

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Dated: March 30, 2004

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UPDATE ON THE METHODOLOGY AND PROCESS
FOR EVALUATING DISTRIBUTED GENERATION AS A DISTRIBUTION
ALTERNATIVE

Pursuant to Ordering Paragraph 2 of the March 16, 2004 Order Instituting Rulemaking, Southern California Edison Company (“SCE”) submits the following update on the methodology and process for evaluating distributed generation as a distribution alternative filed by SCE on May 13 2003 in response to Ordering Paragraph 2 of D.03-02-068.

On May 13, 2003, SCE filed with the Commission SCE’s proposed methodology and process for evaluating distributed generation as a distribution alternative, along with a model agreement for the provision of distributed generation with physical load assurance. (A copy of SCE’s proposed methodology is provided for the Commission’s reference in Attachment A). In the filing, SCE noted that it maintains a ten-year plan for the expansion of the distribution system to meet load growth demands. This plan is updated annually considering equipment loading and reliability design criteria, with specific focus on planning for the following year’s load requirements. The result of the annual distribution system planning is a set of projects which can include B bank additions, distribution circuit additions, and distribution circuit upgrades.

As noted in the filing, SCE recognizes that under certain circumstances, DG may be a more economic means of meeting distribution load growth requirements. To determine when

and where this might be the case, SCE routinely evaluates the use of DG in its annual planning process. During this process, all projects identified for the next two years are first screened using a spreadsheet that tabulates the following characteristics for each distribution system project:

- Estimated Cost;
- Expected capacity addition; and
- Estimated load growth for the next two years.

These characteristics are then compared to the cost of an “ideal” DG alternative, involving a single gas turbine exactly sized to the needed load. Costs that would be required to make the reliability of the DG equivalent to the traditional “wires” project are not considered, since the DG would be required to provide physical assurance. Instances where the ideal DG is less costly than the traditional wires project are then subjected to a more detailed analysis. The detailed analysis considers such things as the availability of gas supply and measures needed to achieve acceptable reliability.

For the 2003-2004 planning cycle, for example, SCE compared 85 proposed system improvement projects to DG alternatives to determine if the DG “solution” may be a more economic means of meeting distribution load growth requirements than the addition of transformers or circuits. This screening did not identify any locations where DG appeared to be less costly than the traditional wires project. SCE intends to issue a Request for Proposal (RFP) and solicit bids from DER suppliers in October 2004 to supply capacity and other distribution system support services in lieu of traditional electric system upgrades that will otherwise be made during 2005 and 2006. In preparing itself to issue such an RFP, SCE reviewed similar solicitations by other utilities to evaluate the extent these efforts might be applicable and/or adaptable to SCE’s situation and needs. In the course of this review, SCE discovered that six investor-owned utilities in the State of New York had publicly solicited DG for distribution support during the past two years. According to one of the companies, Niagara Mohawk, no bids have been successful in meeting the New York utilities’ requirements. In fact, Niagara Mohawk was the only company of the six to even receive a response to its solicitation. In light of this

experience, SCE is working to craft an RFP that will both meet its needs and be palatable to potential suppliers within the framework established by D. 03-02-068.¹

To further enhance the likelihood of a fruitful RFP process, SCE has undertaken a research and consensus building effort with the Electricity Innovation Institute (E2I) to develop a collaborative process to bring interested parties together to discuss the needs, objectives and restrictions in the development of an RFP. E2I has held a series of meetings with DG collaborators including SCE, DG manufacturers, utilities, customers, and representatives of DOE, CEC, CPUC and others. One of the work products of this effort has been the publication of a whitepaper entitled: “A Framework for Developing Collaborative DER Programs: Working Tools for Stakeholders”.

To meet the more immediate needs of SCE’s distribution systems, SCE has been exploring and developing the capability to use temporary, rented, portable generation units for load relief in situations where planned line and substation capacity improvements and expansions have been delayed. To this end, SCE is in the process of establishing a relationship and purchase order with a generator rental company and engineering interconnection facilities to provide for the parallel operation of temporary generation units at various locations throughout SCE’s grid. SCE will use this experience and “lessons learned” to improve the RFP to be issued later in 2004.

Finally, SCE has formed a group dedicated to pursuing the development of a Distribution DG RFP. Also within SCE, a demonstration project is underway to develop a “circuit of the future” with advanced technology, new circuit design, and inclusion of DG in the circuit design. Such a circuit is expected to be built and tested in 2005-2006 timeframe.

¹ In evaluating any proposal, SCE will consider the factors identified in D.03-02-068, namely, (1) whether DG unit will be located where the utility’s planning studies have identified substations and feeder circuits where capacity needs will not be met by existing facilities, given the forecasted load growth; (2) whether the DG unit can be installed and operational in time for the utility to avoid or delay expansion or modification, (3) whether the DG unit can provide sufficient capacity to accommodate the utility’s planning needs; and (4) whether DG can provide the necessary physical assurance to ensure real load reduction on facilities where expansion is deferred.

In summary, SCE is currently utilizing the (Attachment A) methodology and process for evaluating distributed generation as a distribution alternative. Additionally, SCE has benchmarked other utilities to develop a workable RFP process. Finally, SCE has embarked on a process improvement initiative effort with DG customers, DG developers, and DG vendors in a collaborative partnership guided by E2I's framework for developing collaborative distribution energy resource programs.

Respectfully submitted,

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Dated: March 30, 2004

ATTACHMENT A

SOUTHERN CALIFORNIA EDISON COMPANY'S METHODOLOGY
FOR EVALUATING DISTRIBUTOR GENERATION
AS A DISTRIBUTION ALTERNATIVE

I. Introduction/Purpose of Filing

In compliance with Ordering Paragraph 2 of Decision 03-02-068 (D.03-02-068), dated February 27, 2003, Southern California Edison (SCE) provides this description of the methodology SCE uses for evaluating distributed generation ("DG") as a distribution alternative for its distribution system. As noted in the decision, the purpose of this filing is to facilitate an understanding of SCE's distribution planning process and distributed generation's role in that process.²

II. SCE's Planning Process

SCE's primary goal is to provide safe and reliable service to its customers. SCE uses its distribution system planning process to determine the need for future distribution system upgrades or additions which include substation transformers and circuit breakers, bus capacity, short circuit duty capability, reactive capacity requirements, and circuit load carrying capability. As part of this process, SCE analyzes historical load, abnormal weather, forecasts of expected load growth based on economic indicators and local government land planning studies, and detailed technical studies which include short circuit duty studies, load flow studies, reactive planning studies, stability studies, and substation transformer capacity studies.

SCE maintains a ten-year plan for the expansion of its distribution system to meet load growth demands. The plan is updated annually considering equipment loading and reliability design criteria, with specific focus on planning for the following year's load requirements. The ten-year load forecast also identifies potential long lead time projects such as the construction of a new substation and/or subtransmission line that would require right-of-way/easement acquisition and/or General Order 131-D licensing. The update consists of projecting load growth and comparing this to the capacity of distribution substation transformers (B banks) and distribution circuits. SCE accommodates the projected load growth by a combination of adding B banks, adding distribution circuits, moving sections of distribution circuits in the field from heavily loaded circuits to less heavily loaded ones (load rolling), and making upgrades to existing circuits. The output of this annual distribution system planning is a set of projects, which involve B bank additions, distribution circuit additions, and distribution circuit upgrades. SCE's planning analysis considers both system reliability requirements and overall project cost.

III. Consideration of DG as a Distribution Alternative

- **Criteria for Considering DG Based on SDG&E's Model**

² Decision 03-02-068, p. 19.

In D.03-02-068 the Commission required that the utilities “incorporate SDG&E’s distributed generation procurement approach to evaluate alternatives to distribution system upgrades, stating, “SDG&E’s distributed generation procurement approach should be adopted for all utilities because it allows the utility to retain control of its distribution system planning process, maintain reliability at reasonable cost, while providing flexibility to evaluate distributed generation alternatives to a wires solution.”³ The Commission adopted the following conditions that “distributed generation must meet to allow the utility to defer capacity additions and avoid future cost.”⁴

1. Located in the right place – “The distributed generation must be located where the utility’s planning studies identify substations and feeder circuits where capacity needs will not be met by existing facilities, given the forecasted load growth.”⁵
 - During its annual planning update, SCE will evaluate and compare existing substation and circuit (feeder) capacity with projected loads based on the load growth forecast in order to identify projects and alternatives to meet distribution system needs. Any proposed DG solutions must be located where SCE identifies the need for additional distribution capacity to meet system requirements.
2. Installed and operational – “The unit must be installed and operational in time for the utility to avoid or delay expansion or modification.”⁶
 - As discussed below, in order for SCE to avoid investment costs or capital additions to its distribution system, the DG unit(s) must be installed and operational for the peaking cycle identified in the planning process for the traditional project.
3. Provide sufficient capacity – “Distributed generation must provide sufficient capacity to accommodate the utility’s planning needs.”⁷
 - During the annual distribution planning update, SCE will identify the capacity requirements for each distribution system project. DG solutions must be the right size to be considered as an alternative to traditional wires solutions.
4. Provide physical assurance – “[D]istributed generation must provide appropriate physical assurance to ensure a real load reduction on the facilities where expansion is deferred.”⁸
 - As defined in Section 2.7 of SCE’s Form No. 14-751: Model Agreement for Provision of Distributed Generation with Physical Load Reduction Assurance (Model Agreement), the DG solution will be required to provide physical assurance.

³ Decision 03-02-068, Conclusion of Law No. 4.

⁴ Decision 03-02-068, *mimeo*, p. 18.

⁵ Decision 03-02-068, *mimeo*, p. 18

⁶ Decision 03-02-068, *mimeo*, p. 18

⁷ Decision 03-02-068, *mimeo*, p. 18

⁸ Decision 03-02-068, *mimeo*, p. 18

- **Methodology for Evaluating DG as a Distribution Alternative**

Under some circumstances, DG may be a more economic means of meeting distribution load growth requirements than the addition of transformers and circuits. To determine where this is the case, during the annual planning update, all projects identified for the next two years are first screened using a spreadsheet which tabulates the following characteristics for each distribution system project:

- Estimated cost;
- Expected capacity addition; and
- Estimated load growth for the next two years.

These characteristics are then compared to the cost of an “ideal” DG alternative, involving a single gas turbine exactly sized to the needed load. Any cost that would be required to make the reliability of the DG equivalent to the traditional “wires” project is neglected because of the requirement that the DG alternative provide physical assurance.

Instances where this ideal DG is less costly than the traditional project are then subjected to detailed analysis. The detailed analysis considers such things as the availability of gas supply and measures needed to achieve acceptable reliability, and identifies projects where DG is feasible.

- **Public Notification of DG Needs**

When SCE identifies projects where DG might be an appropriate distribution system alternative, SCE will issue a request for proposal (RFP) to pre-qualified bidders using its current procurement process. The RFP will describe the project to be deferred by the DG, the location of the project, generic requirements for interconnection under Rule 21 and WDAT, as applicable, and conditions including the provision of physical assurance of load removal upon loss of generation. The RFP will include standard contracts and forms for submittal of essential information.

In addition, SCE will post information on the SCE Website advising parties on how to contact SCE if they are interested in providing DG as a distribution alternative.

- **Evaluation and Selection**

All proposals submitted in response to the RFP by the date specified in the RFP, along with DG proposals developed internally, will be evaluated for technical adequacy. Where technically equivalent proposals exist, selection will be based on the lowest price determined in a bidding process. SCE will consider proposals involving SCE ownership and outside party ownership on an equal basis. SCE will compare the cost of the proposed DG solution selected through the RFP to determine if it is cheaper than the utility wires solution. If the RFP is the least cost solution, SCE will proceed with implementing the DG solution. Responsibility for performing these evaluations and making the selections resides with the manager responsible for the distribution system planning process.

- **Performance**

Any DG project will have to meet the same in-service date as the traditional project it displaces. RFPs will therefore be issued for projects having a required in-service date approximately two years from the date of the RFP. This is to allow sufficient time for proposal evaluation, selection, contract negotiation, construction, and startup. The DG project will be required to provide assurance of project completion by the date on the critical path which allows SCE to revert to constructing its traditional project and meet the required in-service date (the in-service date is typically May 1 of the required year, and the last opportunity for SCE to begin such a project successfully is typically late summer of the preceding year).

- **Contracting**

Once a DG solution is selected through the RFP process, SCE and DG vendor will execute an agreement similar to the Model Agreement (See Attachment B).

- **Compensation**

Payments for deferred capital expenditure will be made according to the terms of the contract, contingent on satisfactory performance as defined in the contract. As addressed in D.03-02-068, compensation will be paid either as a bill credit or direct payment and will not “exceed the cost of the planned addition multiplied by the short-term carrying cost of capital and the number of years of deferral.” Performance which falls below specified metrics defined in the contract may result in termination.

CERTIFICATE OF SERVICE

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of **SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) UPDATE ON THE METHODOLOGY AND PROCESS FOR EVALUATING DISTRIBUTED GENERATION AS A DISTRIBUTION ALTERNATIVE** on all parties identified on the attached service list. Service was effected by means indicated below:

- ☒ Placing the copies in properly addressed sealed envelopes and depositing such envelopes in the United States mail with first-class postage prepaid (Via First Class Mail);
- ☐ Placing the copies in sealed envelopes and causing such envelopes to be delivered by hand to the offices of each addressee (Via Courier);
- ☒ Transmitting the copies via facsimile, modem, or other electronic means (Via Electronic Means).

Executed this **30th day of March, 2004**, at Rosemead, California.

Vicki Carr-Donnerson
Project Analyst
SOUTHERN CALIFORNIA EDISON COMPANY

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March 30, 2004

Docket Clerk
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102

Re: R.04-03-017

Dear Docket Clerk:

Enclosed for filing with the Commission are the original and eight copies of **SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) UPDATE ON THE METHODOLOGY AND PROCESS FOR EVALUATING DISTRIBUTED GENERATION AS A DISTRIBUTION ALTERNATIVE** in the above-referenced proceeding.

We request that a copy of this document be file-stamped and returned for our records. A self-addressed, stamped envelope is enclosed for your convenience.

Your courtesy in this matter is appreciated.

Very truly yours,

Michael D. Montoya

MDM:scp:LW040850035

Enclosures

cc: All Parties of Record (R.04-03-017 & R.99-10-025)
ALJ Kim Malcolm
President Michael R. Peevey